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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,869	12/19/2001	Rene Jean Zimmer	DN2001205	3717

7590 09/21/2004

The Goodyear Tire & Rubber Company
Patent & Trademark Department-D/823
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EXAMINER	
MAKI, STEVEN D	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,869	ZIMMER ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8-31-04 has been entered.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

tread

3) **Claims 1-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsawa (US 2001/0032691) in view of Lobert et al (US 4750693) and Japan '135 (JP 11-59135).**

Ohsawa discloses a tire having grooves wherein projections are provided on the sidewalls of the groove. The projections have a depth (height) of 0.01-0.5 mm (10 to 500 micrometers) such as 0.05 mm (50 micrometers). The projections reduce resistance to the flow of water in the grooves to improve drainage efficiency of the grooves. Ohsawa teaches "... a number of minute vortexes can be generated along the groove walls to reduce the frictional resistance between the water and the groove walls thereby to improve the wet performances at an actual running time" (paragraph 14).

The pitch P of the projections is less than or equal to two times the depth D. See paragraph 27. Ohsawa's teaching to use **P ≤ 2D** strongly suggests using an angle within the claimed range of 5 to 60 degrees. For example: In the tire of Example 1 in which **P = D**, an angle α of 53.2 degrees is defined. Another example: In the tire g of Table 1 in which **P = 0.75 D**, an angle of 41.1 degrees is defined. With respect to the determination of Ohsawa's acute angle, see pages 3 and 4 of office action dated 5-18-04. At paragraph 23, Ohsawa teaches that asymmetrically shaped grooves, which define asymmetrically shaped projections, may be used. At paragraph 164, Ohsawa teaches that other shapes may be used for the smaller grooves defining the projections "if they have the effect to reduce the resistance to the water flow". Ohsawa does not recite using undercut projections.

As to claim 1 (tire), it would have been obvious to one of ordinary skill in the art to configure Ohsawa's projections such that

- the projection is undercut,
- the projection has two sides of unequal length and is thereby asymmetrical, and
- defines define an angle alpha of 5-60 degrees (a relatively small acute angle)

since (1) Ohsawa, directed to the problem of reducing resistance of water flow, teaches forming projections with a desired shape (e.g. an asymmetrical shape) such that the pitch is less than two times the depth and so that resistance to flow of water is reduced, (2) Lobert et al, directed to reducing drag between a moving body and a flowing medium such as water, teaches using an undercut asymmetrical shape (figure 4b) for

projections for reducing resistance to a flowing medium, and (3) Japan '135 shows one of ordinary skill in the a tire art that undercut projections may be formed in grooves of a tire tread (see figure 3). No unexpected results of reducing resistance to water flow over the applied prior art has been shown.

As to claim 16 (mold), Ohsawa teaches using a vulcanizing mold. See for example paragraph 209. One of ordinary skill in the art would readily understand that the mold has surfaces corresponding to the projections so that an actual tire having such projections can be vulcanized.

As to the dependent claims: As to claim 2, the claimed angle of 15-55 degrees would have been obvious in view of Ohsawa's teaching to form projections with a pitch less than two times the depth to reduce resistance to flow and Lobert et al's teaching to undercut asymmetrically shaped projections to reduce resistance to water flow. As to claim 3, the limitation of curved line apexes would have been obvious since Ohsawa suggests that the peaks of the projections may be curved (see e.g. figure 9). As to claim 4, note the teaching from the above applied prior art to use an undercut asymmetrical cross section for the projection. As to claim 5, the claimed angle beta being between -15 degrees and +15 degrees would have been obvious in view of Ohsawa's suggestion to longitudinally orient the projections (an angle beta of 0 degrees thereby being defined). Parallel longitudinal projections must define with each other an angle of 0 degrees which falls within the claimed range of -15 to + 15 degrees. As to claim 6 (distance d being 0-100 micrometers), note the spacing of the projections disclosed by Ohsawa. As to claim 7, the limitation of the sides being slightly curved

would have been obvious since Ohsawa suggests that the sides of the projections may be curved (see e.g. figure 9). As to claim 8, the claimed varying angle alpha would have been obvious in view of Ohsawa's suggestion to vary angle theta 1 (figure 15) so that the tire can easily be removed from the mold. As to claim 9, the claimed varying height would have been obvious since Ohsawa shows vary height (figure 15) so that the tire can easily be removed from the mold. As to claims 10-13, Ohsawa teaches providing the projections in a groove of a tread (e.g. on the sidewalls and bottom of a groove). As to claim 15, the description of "lettering" fails to require structure different from that disclosed in Ohsawa. In figure 1 of Ohsawa, the projection forms the letter "I". As to claim 18 (vulcanizing tire), Ohsawa as noted above teaches using a vulcanizing mold to form the tire.

sidewall / tread

4) **Claims 1-8, 10-16 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al (US 4198774) and optionally Ohsawa and Lobert et al.**

Kemp et al discloses a tire having asymmetrically shaped projections. See for example figure 8 or 10. The projections are provided in a groove or on a sidewall of the tire. See col. 4 lines 50-54. Kemp et al teaches that one side (the shorter side) may be inclined at an angle of substantially 90 degrees whereas the other side is inclined at a smaller angle so as to reflect a desired amount of light. See col. 5. Kemp et al discloses an example height of 0.25 mm for the projection. See col. 5 lines 7-18. Kemp

et al does not recite using a height of 1-100 micrometers (0.0002-0.1 mm) for the projection.

As to claim 1, it would have been obvious to one of ordinary skill in the art to form Kemp's projections such that the projection has a height of 1-100 micrometers (0.0002-0.1 mm) and is an undercut asymmetrically shaped projection defining an angle of 5-60 degrees in view of (1) Kemp et al's teaching to form asymmetrically shaped projections having a small height (e.g. 0.25 mm) and defining an acute angle so as to reflect a desired amount of light, (2) Roberts et al's teaching that projections for indicia may be undercut (see figure 5E) and optionally (3) Ohsawa and Lobert et al suggest forming asymmetrically shaped projections, which define an acute angle, with a height small enough to reduce resistance to fluid flow; it being emphasized that (a) Ohsawa et al specially suggests using a projection height of 0.01-0.5 mm to reduce resistance to fluid flow and (b) Lobert specifically teaches the use of undercut projections (figure 4b). Kemps use of projections to reflect light to improve visibility of indicia corresponds directly to applicant's alternative benefit of using projections to improve optical appearance. See paragraph 19 of applicant's specification. Kemp's disclosure of the small height of .25 mm reasonably suggests a height such as .1 mm falling within the claimed range. Although Kemp et al does not prefer undercut projections (see co..5 lines 48-53), Roberts et al shows that projections, which like Kemp et al's are for visual effect, may be undercut if desired. No unexpected results of increased visual effect or ease of manufacturing over the applied prior art has been shown.

As to the dependent claims: As to claim 2 (angle of 15-55 degrees), Kemp et al suggests using asymmetric projection having sides defining an acute angle. As to claim 3 (curved line apexes), see col. 4 lines 59-63 of Kemp et al. As to claim 4, note Kemp et al's suggestion to incline one side at an acute angle (e.g. alpha 161). As to claim 5, Kemp et al suggests orienting the length of the projections in the same direction - an angle beta of 0 degrees thereby being defined. As to claim 6, note the spacing of the projections shown by Kemp et al. As to claim 7, the limitation of the sides being slightly curved would have been obvious since Kemp et al teaches at col. 4 lines 55-63 that the projections do not have to have a perfect triangular cross section. As to claim 8, the claimed varying angle alpha would have been obvious in view of Kemp et al's teaching to vary the cross section of the projections (e.g. figure 17). As to claims 10-13 (tread), the limitations therein would have been obvious in view of (a) Kemp et al's suggestion to use the projections in a tread such as in a groove to create an optical effect and optionally (b) it is taken as well known / conventional per se to color the sidewalls and bottom of a groove (albeit with a "smooth" colored rubber layer) to improve the appearance of the groove. As to claims 14 and 15, Kemp et al discloses lettering on a sidewall of a tire comprising the projections.

As to claim 16 (mold), Kemp et al forms the projections using a mold. See col. 10 lines 25-35. As to claim 18, Kemp et al teaches curing (vulcanizing) the tires. Again see col. 10 lines 25-35.

5) **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al and optionally Ohsawa and Lobert et al as applied above and further in view of Attinello et al (US 5645660).**

As to claim 9, it would have been obvious to one of ordinary skill in the art to use the claimed varying heights for the projections of Kemp et al since Attinello et al suggests using different heights for small projections on the sidewall of a tire so that if the tire scruffs a curb only the outermost ridges may be damaged.

6) **Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kemp (US 6253815) in view of Roberts et al and optionally Ohsawa and Lobert et al as applied above and further in view of Baker (US 5603796).**

As to claim 17, it would have been obvious to provide a tape with the projections of Kemp et al and adhere the tape to a vulcanized tire since (a) Kemp et al suggests using the projections, which are defined by corresponding recesses (e.g. asymmetric triangular recesses), in indicia on the sidewall of a tire, (b) Kemp et al suggests using known techniques to form the projections on the tire (col. 10 lines 25-35) and (c) Baker shows providing indicia defined by recesses on a sidewall of the tire by providing a tape (applique) having the recesses therein and bonding the tape (applique) to a tire before or after mounting the tire to a vehicle. In view of Baker's description of "before or after the tire 14 is mounted to a vehicle", one of ordinary skill in the art would readily understand that the tire is vulcanized when the tape (applique) is adhered thereto.

Remarks

7) Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection. With respect to applicant's arguments regarding "undercut" note the application of Lobert et al and Roberts et al.

8) No claim is allowed.

9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
September 20, 2004

Steven D. Maki 9-20-04
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Au 1733